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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/760,190

01/21/2004

Kia Silverbrook

MPA29US

2147

24011

7590

03/01/2006

SILVERBROOK RESEARCH PTY LTD  
393 DARLING STREET  
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EXAMINER

HSIEH, SHIH WEN

ART UNIT

PAPER NUMBER

2861

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/760,190

Applicant(s)

SILVERBROOK ET AL.

Examiner

Shih-wen Hsieh

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## ***Response to Amendment***

### ***Claim Objections***

1. Claim 1 is objected to because of the following informalities:

Lines 3 and 6, please change "the surface" and "the printing operation" into "a surface" and "printing operation" to correct a minor lack of antecedent basis problem.

### ***Double Patenting***

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-9 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 and 5-10 of copending Application No. 10/760,227 (US PGPUB 2005/015,7057) in view of Silverbrook et al. (USPGPUB No. 2005/015,7056)('7056) respectively. All cases cited in this paragraph deal with a printhead module having at least two integrated circuits and its associated connectors, while Silverbrook et al. ('7056) teach what are the deficiencies in the instant application. The table below presents claims comparison between these two applications to indicate the obviousness of the one over the other.

This is a provisional obviousness-type double patenting rejection.

<u>10/760,190</u>	<u>10/760,227 (2005/015,7057)</u>
<p>1. A printhead assembly, comprising: at least one printhead module comprising at least two printhead integrated circuits, each of which has nozzles formed therein for delivering printing fluid onto the surface of print media, a support member supporting and carrying the printing fluid for the at least two printhead integrated circuits, and an electrical connector for connecting electrical signals to the at least two printhead integrated circuits; drive electronics arranged to control the printing operation of at least one of the at least two printhead integrated circuits via the electrical connector; a casing comprising a support frame on which the at least one printhead module and a plurality of mounting elements mounting the drive electronics are removably arranged; a first connector arrangement at one end of the support frame connecting the drive electronics and printhead integrated</p>	<p>1. A printhead assembly, comprising: at least one <u>printhead module</u> comprising at least <u>two printhead integrated circuits</u>, each of which has nozzles formed therein for delivering printing fluid onto the surface of print media, a support member supporting the at least <u>two printhead integrated circuits</u> and having at least one longitudinally extending channel for carrying the printing fluid, and an electrical connector for connecting electrical signals to the printhead integrated circuits; a casing comprising a support frame <u>removably</u> mounting the at least one <u>printhead module and drive electronics</u> arranged to control the printing operation of at least one of the at least <u>two printhead integrated circuits</u> via the electrical connector; and at least one connector arrangement mounted to at least one longitudinal end of the support frame and carrying at least one power terminal for</p>

<p>circuits to a power supply and a data input; and a second connector arrangement at the other end of the support frame spring loading the plurality of mounting elements in the direction of the first connector arrangement.</p>	<p>connecting the electrical connector to a power supply, at least one data terminal for connecting the <u>drive electronics</u> to a data input, and at least one fluid delivery port for connecting the at least one channel of the support member to a fluid supply via fluid delivery tubes, the housing being configured to allow connection of the power and data terminals and fluid delivery port to the respective power supply, data input and fluid delivery tubes.</p> <p>2. A printhead assembly according to claim 1, wherein two connector arrangements are provided comprising a first connector arrangement carrying the power and data terminals and the fluid delivery port at one longitudinal end of the support frame and a second connector arrangement at the other longitudinal end of the support frame spring loading at least one first <u>printed circuit board on which the drive electronics</u> are carried in the direction of the first connector arrangement.</p>
<p>2. A print head assembly according to claim 1, wherein: the drive electronics incorporates at least one controller arranged on at least one first printed circuit board for controlling the printing operation of the at least one of the printhead integrated circuit, the at least one first printed circuit board being removably mounted to at least one of the mounting elements; the first connector arrangement is a second printed circuit board and the second connector arrangement is a third printed circuit board; and the at least one first printed circuit board is engaged at the one end of the support frame by the second printed board and is engaged at the other end of the support frame by a spring portion formed in the third printed</p>	<p>3. A printhead assembly according to claim 2, wherein: the first connector arrangement is a second printed circuit board and the second connector arrangement is a third printed circuit board; and the at least one first printed circuit board is engaged at the one end of the support frame by the second printed board and is engaged at the other end of the support frame by a spring portion formed in the third printed circuit board.</p>

circuit board. 3. A printhead assembly according to claim 2, wherein the third printed circuit board comprises termination connections for terminating a data signal traversing the at least one first printed circuit board from the second printed circuit board.	9. A print head assembly according to claim 6, wherein the third printed circuit board comprises termination connections for terminating a data signal traversing the at least one first printed circuit board from the second printed circuit board.
4. A printhead system according to claim 3, wherein the second printed circuit board carries a power terminal for connecting with the power supply and a data terminal for connecting with the data input.	
5. A printhead system according to claim 4, further comprising a plurality of longitudinally extending electrical conductors connected to the second printed circuit board for delivering the power from the power supply to the drive electronics and printhead integrated circuits via the electrical connector.	5. A print head system according to claim 3, further comprising a plurality of longitudinally extending electrical conductors connected to the second printed circuit board for delivering the power from the power supply to the drive electronics and printhead integrated circuits via the electrical connector.
6. A printhead system according to claim 4, wherein the third printed circuit board carries a power terminal for connecting with the power supply.	6. A printhead system according to claim 3, wherein the third printed circuit board carries a power terminal for connecting with the power supply.
7. A printhead system according to claim 6, further comprising a plurality of longitudinally extending electrical conductors arranged as two groups of electrical conductors respectively connected to the second and third printed circuit boards for delivering the power from the power supply to the drive electronics and printhead integrated circuits via the electrical connector at respective ends of the printhead assembly, respective ones of electrical conductors of the two groups of electrical conductors being connected together at abutting regions intermediate the ends of the printhead assembly.	7. A printhead system according to claim 6, further comprising a plurality of longitudinally extending electrical conductors arranged as two groups of electrical conductors respectively connected to the second and third printed circuit boards for delivering the power from the power supply to the drive electronics and printhead integrated circuits via the electrical connector at respective ends of the printhead assembly, respective ones of electrical conductors of the two groups of electrical conductors being connected together at abutting regions intermediate the ends of the printhead assembly.
8. A printhead assembly according to claim 7, wherein the abutting regions of the individual electrical conductors are arranged in overlapping relationship.	8. A printhead assembly according to claim 7, wherein the abutting regions of the individual electrical conductors are arranged in overlapping relationship.
9. A printhead assembly according to	10. A printhead assembly according to

claim 1, wherein: the at least one printhead module is formed as a unitary arrangement of the at least two printhead integrated circuits, the support member, the electrical connector, and at least one fluid distribution member mounting the at least two printhead integrated circuits to the support member; and the support member has at least one longitudinally extending channel for carrying the printing fluid for the printhead integrated circuits and includes a plurality of apertures extending through a wall of the support member arranged so as to direct the printing fluid from the at least one channel to associated nozzles in both, or if more than two, all of the printhead integrated circuits by way of respective ones of the fluid distribution members.

claim 1, wherein: the at least one printhead module is formed as a unitary arrangement of the at least two printhead integrated circuits, the support member, the electrical connector, and at least **two fluid distribution members** each mounting one of the at least two printhead integrated circuits to the support member; and the support member has at least one longitudinally extending channel for carrying the printing fluid for the printhead integrated circuits and includes a plurality of apertures extending through a wall of the support member arranged so as to direct the printing fluid from the at least one channel to associated nozzles in both, or if more than two, all of the printhead integrated circuits by way of respective ones of the fluid distribution members.

In regard to:

Claim 1:

The subject matters in claim 1 of the instant application such as: at least one print head module, at least two print head integrated circuits, support member, an electrical connector, drive electronics, casing comprising a support frame. Are the same as those in the co-pending application. Their functions and limitations associated with each of the subject matters in both cases are clear and the same as that can be seen in the table provided above, Examiner intends not to repeat them in here for saving time and paper. The subject matters of "first and second connector arrangements" in claim 1 of the instant application 10/760,190 are the same as those in claim 2 of the co-pending application 10/760,227 (2005/015,7057).

The device of co-pending application ('7057) DIFFERS from claim 1 of the instant application in that it does not teach:

a plurality of mounting element mounting the drive electronics.

Silverbrook et al. ('7056) teach a print head assembly comprises at least two of the mounting elements, refer to page 3, [0035] and [0036].

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of co-pending application 10/760,227 (2005/015,7057) to include a plurality of mounting elements as taught by Silverbrook et al. ('7056) for the purpose of carrying a plurality of electrical conductors, which sends power to the drive electronics so as to be in an ready-to-operated condition.

Claim 2:

The subject matters and limitations of "the first connector arrangement is a second printed circuit board and the second connector arrangement is a third printed circuit board; and the at least one first printed circuit board is engaged at the one end of the support frame by the second printed board and is engaged at the other end of the support frame by a spring portion formed in the third printed circuit board" in the instant application are the same as those in claim 3 of the co-pending application 10/760,227 (2005/015,7057).

The device of the co-pending application 10/760,227 (2005/015,7057) as modified in view of Silverbrook et al. ('7056) DIFFERS from claim 2 of the instant application in that it does not teach:



the drive electronics incorporates at least one controller arranged on at least one first printed circuit board for controlling the printing operation of the at least one of the printhead integrated circuit, the at least one first printed circuit board being removably mounted to at least one of the mounting elements.

Silverbrook et al. ('7056) further teach at least one controller (100, fig. 18A), refer to page 3 [0029] and page 10 [0171].

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of co-pending application 10/760,227 (2005/015,7057) as modified in view of Silverbrook et al. ('7056) to include at least one controller as further taught by Silverbrook et al. ('7056) for the purpose of providing control over the print module printing operation.

Claim 3:

Corresponding to claim 9 of the co-pending application 10/760,227 (2005/015,7057).

Claim 4:

The device co-pending application 10/760,227 (2005/015,7057) teaches the second printed circuit board (refer to claim 3 of the co-pending application 10/760,227 (2005/015,7057)).

However, the device of co-pending application 10/760,227 (2005/015,7057) as modified in view of Silverbrook et al. DIFFERS from claim 4 in that it does not teach:

wherein the second printed circuit board carries a power terminal for connecting with the power supply and a data terminal for connecting with the data input.

Silverbrook et al. ('7056) further teach a second printed circuit board carrying a power terminal for connecting with the power supply and a data terminal for connecting with the data input, refer to page 3 [0039].

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of co-pending application 10/760,227 (2005/015,7057) as modified in view of Silverbrook et al. to include the second printed circuit board as further taught by Silverbrook et al. ('7056) for the purpose of connecting the electrical connector to a power supply via a longitudinally extending electrical conductors by this power terminal and also connecting the drive electronics to a data input via the first printed circuit board by this data terminal.

Claim 5:

Corresponding to claim 5 of the co-pending application 10/760,227 (2005/015,7057).

Claim 6:

Corresponding to claim 5 of the co-pending application 10/760,227 (2005/015,7057).

Claim 7:

Corresponding to claim 7 of the co-pending application 10/760,227 (2005/015,7057).

Claim 8:

Corresponding to claim 8 of the co-pending application 10/760,227 (2005/015,7057).

Claim 9;

Corresponding to claim 10 of the co-pending application 10/760,227  
(2005/015,7057).

The difference between claim 9 and claim 10 is:

two fluid distribution members are disclosed, while claim 9 only discloses at least one fluid distribution member.

A fluid distribution member used to supply fluid to nozzles formed in a print head integrated circuits is a well known arrangement. Therefore, arranging at least two fluid distribution members each of the members associated with nozzles of each of the at least two print head integrated circuits is also well known, refer to MPEP 2144.03, In re Malcolm, 129 F.2d 529, 54 USPQ 235 (CCPA 1942).

### ***Response to Arguments***

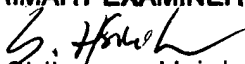
4. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

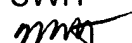
Double patenting rejection is given in this office action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 7:30AM -5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, S D. Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**SHIH-WEN HSIEH**  
**PRIMARY EXAMINER**  
  
Shih-wen Hsieh  
Primary Examiner  
Art Unit 2861

SWH  
  
Feb. 22, 2006